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ABSTRACT

Several categories of the affective domain are important to the schooling process. Schools are delegated the responsibility of helping students to clarify their esthetic, instrumental, and moral values. Three areas of affect are related to student achievement: subject-related affect, school-related affect, and academic self concept. In addition, positive self concept is likely to be developed if a student has successful experiences in school. Since the term affect has multiple components, researchers have attempted to describe the affective domain by creating taxonomies or classification schemes. Such taxonomies have been developed by Krathwohl, Brandhorst, Gephart and Ingle, Hoepfner, and Nunally, among others. Based on an analysis of these taxonomies, three major categories of affective goals can be identified as significant components of schooling: (1) goals related to positive attitudes toward subject areas or disciplines; (2) goals related to the development of a rational basis for attitudes and values; and (3) goals related to affective processes. Based on these goals, learning hierarchies can be developed for the affective domain, and hierarchies can be developed which integrate the affective and cognitive domains. (BW)

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Developing Hierarchical Structures Integrating Cognition and Affect

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DEVELOPING HIERARCHICAL STRUCTURES
INTEGRATING COGNITION AND AFFECT

The original purpose for separating the cognitive and affective domains was to enhance the study and communication of two aspects of human behavior. The actual separation of the two dimensions was largely arbitrary since psychologists and educators agreed that in actuality no separation of cognitive and affective states was possible (Bloom, 1976; English & English, 1958; Fishbein, 1967; Gagné, 1970; Gephart & Ingle, 1976; Payne, 1976; Rokeach, 1960; Transgaard, 1973; Wyer, 1974). Affective and cognitive characteristics are not separable. They develop together and influence together (Gordon, 1970).

While the two aspects of behavior cannot truly be separated, educators have studied them as though they are distinct entities. The literature abounds with conceptual papers, research and taxonomies on either cognition or affect, but rarely addresses their integration. Not only has there been limited study of the integration of the domains, the affective domain has received much less attention than the cognitive domain. The majority of school work and, therefore, educators' time has gone into thinking about, studying, evaluating, and teaching the cognitive aspects of behavior. This is due, at least in part, to a general agreement of the definition of cognition and the fact that cognitive aspects of behavior are easier to specify, operationalize and measure than are the affective components. Evidence of this can be seen in the extensive taxonomic work done in the cognitive domain by researchers such a Bloom (1956), Gagné (1962; 1965), Guildford (1967), and Gerlach & Sullivan (1967).

The affective domain poses a unique set of problems for educators. The definition is so broad and often unfocused and unclear that it seems to include all aspects of behavior not clearly cognitive. This lack of definition and focus has made measurement and research of the domain difficult and has made translation of affective behaviors into classroom practices inadequate. Bills (1976) states:

> "...1) We are not close to an agreement about what affect is or what to call it, 2) What we are trying to measure is so unclear to us that we cannot develop instruments with acceptable psychometric qualities, and ... I have concluded that unless we can achieve a better concept of affect, we will never be able to deal with it in our classrooms or in our research" (p. 10).

Although the original intent of this paper was to demonstrate a method of integrating the cognitive and affective domains by developing learning hierarchies, that task is impossible without the clear specification of affective goals. If the cognitive and affective domains are to be integrated, some clear definition or some categories of behaviors describing affect must be delineated. Therefore, the primary focus of this paper will be to describe categories of outcomes defining the affective domain. These goals will then be used to demonstrate a method for integrating the two domains by developing hierarchical sequences that describe both cognitive and affective outcomes.

What Is the Affective Domain?

Acquisition of affective goals and learning outcomes is one of the top priorities in education today. But such goals are difficult to define, much less implement, because descriptions of the affective domain are confusing in a number of important ways. The first area of confusion revolves around affect as a means to an end or an end itself. Some researchers describe means, i.e., learning environments or educational experiences and

activities, which facilitate "positive affect." Oftentimes the means are fully described, but the ends or results of those means are not. Other researchers refer directly to affective ends or learning outcomes, i.e., behavior changes presumably associated with the affect. When integrating the two domains hierarchically, it is important that ends not means are specified.

A second area of confusion concerning the affective domain is that definitions of affect vary widely both between and within disciplines. Some psychologists define affect as a physiological or biological state; educators and other psychologists interested in behavior changes define affect as a cognitive type process (Bills, 1976). The definitional problem is further compounded when one looks within the field of education for clarification. Apparently everything but achievement, aptitude, and intelligence is included since all of the following terms can be found associated with affect: self-concept, motivation, interests, attitudes, beliefs, values, self-esteem, morality, ego development, feelings, and personality. As educators we are certainly concerned with all of these and since they are clearly not cognitive, the catch-all place has become the affective domain.

To recognize that these areas of confusion exist is not enough. It is my position that some categories of affective ends, those that are important components of schooling, need to be defined. Such a definition should provide a framework for discussing the affective domain.

Categories of the Affective Domain Important to the Schooling Process

One way to attack the affective domain is to analyze affective taxonomies, but a review of these do not seem to provide a complete picture of the domain. Taxonomies are generally value free and while most imply that

attitudes, values, and interests should be developed, the content of the attitudes and values are not specified. Schooling, however, is not a value free process. Although imposition of values and morals is not within the jurisdiction of the school (Shaver, 1972), any social studies or health teacher can tell you that it is impossible to teach either subject without running head on into questions of values, morals, and ethics. Therefore, the domain taxonomies may not be the best way to delineate the affective domain. Perhaps it is the content or the cognitive component of various affective dimensions which may provide the framework necessary to discuss affect as it pertains to teaching and learning.

Values. Shaver (1972) points out that the school is assumed to be responsible for improving thinking and the decision-making abilities of its students. This is as true in the realm of values as it is in mathematics or science. While he clearly states that schools should not impose values, schools should "be helping students to clarify (and to learn how to clarify on their own) the standards they use in making decisions about worth" (p. 19). Since values and attitudes are inconsistent and shift over time, a high priority for educators is clarification of and decision-making about values, defined as "our standards or principles of worth...the criteria by which we judge things (not just objects, but ideas, actions, and situations as well) to be good, worthwhile, or desirable; or, ...bad, worthless, or despicable; or, of course, somewhere in between on the continua..." (p. 3). Shaver describes three types of values important to schooling about which students should be engaged in decision making:

1) esthetics values: judgments about what is pleasurable or beautiful, in areas such as music, art, nature, or personal appearance,

2) instrumental values: judgments about performance, generally of sufficiency or adequacy, that enable one to reach a specific end, i.e., means or procedural values, and

3) moral values: judgments or decisions about ethics carried out in the social, political or economic arena. Moral values are widely diverse in both importance and applicability and range from personal preferences to basic values, i.e., those concerned with human life and the existence of mankind.

School Achievement and Affect. While Shaver has described objects of affect (values) internal to the learner, Bloom (1976) describes objects of affect external to the learner. Bloom posits a causal relationship between feelings of adequacy or inadequacy in school and affect: "...we believe that most of the affective consequences [described below] are influenced directly by school achievement and especially by the student's perceptions about his school achievement" (p. 140). Bloom describes three categories of achievement related to affect: a) subject related affect, b) school related affect, and c) academic self-concept.

Subject related affect refers to positive attitudes toward a given subject or task and can be operationally defined as whether an individual would voluntarily engage in additional learning tasks given the opportunity. Since the student and/or the teacher make some judgments about the adequacy of a student's performance regarding any given subject, this type of affect is highly influenced by the student's perceptions of his competence. Therefore, Bloom suggests that the teacher should strive to promote student success, thereby increasing subject related affect.

School related affect is a composite of subject related affect. The more successful the student is in all subjects, the more positive his view of school and learning. Bloom states that school related affect is relatively stable after the primary grades.

Both subject and school related affect directly effect a third category of affective consequences, academic self-concept. As the student continues in school and is relatively successful or unsuccessful, he begins to form judgments about himself as a learner and perhaps as a person. The judgments he makes, therefore, move from external evaluations of subjects and school to internal evaluations of self. These evaluations regarding self related to school generalize to other aspects of self. Bloom states, "low academic self-concept increases the probability that an individual will have a negative general self-concept" (p. 156). He then takes these ideas a step further by linking school and subject related affect, academic self-concept and general self-concept to the individual's mental health by suggesting that success or failure in school may affect ego development, general anxiety levels, and the ability to handle stress and frustration.

The components of affect described by Bloom provide a different view of the affective domain than that described by Shaver, although there is some overlap, i.e., subject or school related could be seen as parallel or complementary to Shaver's esthetic values. Bloom, however, does not address the question of morals or ethics, but does lead us into another area of affect--self-concept and personality characteristics.

Self-Development. While Bloom (1976) recognizes the importance of self-concept as an affective consequence of education, he does not operationally define self-concept as an end but suggests that a positive self-concept is

likely to be developed if an individual has successful experiences in school. Brandhorst (1978), however, argues that self-development is an educational end in itself; a goal currently being shortchanged by the public school system. He states that most affective taxonomies, and specifically the Krathwohl, et al. (1964) paradigm, are associated with Maslow's D-cognition construct "which is purposive, a means to an end" (p. 7). He suggests that affective taxonomies need to be developed which are associated with the construct of B-cognition conceptualized by Maslow as an end in itself. Using Maslow's B-cognition as a basis, Brandhorst defines four goal constructs which are ends in themselves, i.e., effectance, efficacy, competence and analytic-coping ability, and develops two taxonomies and proposes a third that define goals which are ends in themselves, i.e., a taxonomy with an ego-involvement orientation, a motivational orientation and a moral development orientation. Brandhorst's taxonomies are based on "behavior in learning experiences" (p. 9) and, therefore, are themselves means rather than ends, but he argues that specifying these behaviors as outcomes forces them back to the D-cognition construct. Since he is referring, at least in part, to means or what he calls "experience outcome unity" (p. 9), these conceptions of affective behavior are not directly comparable to the Shaver (1972) and Bloom (1976) categories of outcomes. However, Brandhorst's taxonomies have identified other important dimensions of the affective domain which should not be overlooked when forming categories of affective goals associated with schooling.

Affective Domain Taxonomies

Since the term affect has multiple components researchers have attempted to describe the affective domain by creating taxonomies or classification

schemes. The Krathwohl, et al. (1964) taxonomy is perhaps the most well known; however, others exist (Brandhorst, 1978; Gephart & Ingle, 1976; Hoepfner, et al., 1972; Nunally, 1967).

Payne (1976) reviewing the Krathwohl, et al. (1964), Hoepfner, et al. (1972) and Nunally, (1967) taxonomies pointed out that commonalities existed among them in the terms used, i.e., "interests," "attitudes" and values," and the characteristics associated with various facets of affect (e.g., affective variables are (a) learned, (b) have specific referents, and (c) vary in degree of interrelatedness).

Using the above conceptions as a base, Gephart and Ingle (1976) proposed a tentative affective taxonomy which they define as a "suggested direction" for organizing the affective domain. It includes two major components, physiological responses or behaviors and psycho-social responses or behaviors, and multiple subcomponents (See Figure 1). If we exclude the physiological responses from this discussion, the Gephart and Ingle taxonomy encompasses and extends the other taxonomies. Like the others, "values," "beliefs" and "attitudes" are elements of the taxonomy, but additional categories, "emotions" and "perceptions" are also included. The category "perceptions" is perhaps similar to Bloom's academic self-concept and Brandhorst's self-development dimensions discussed earlier.

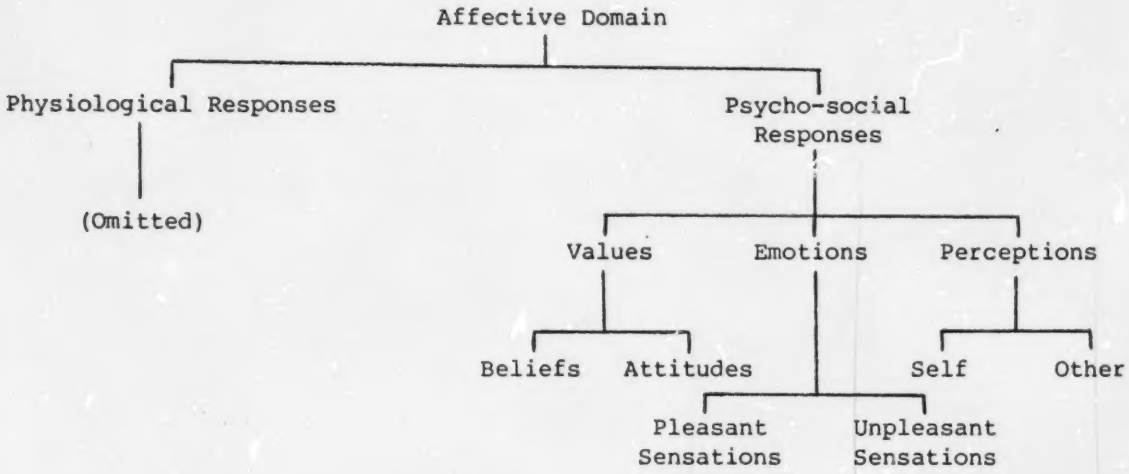


Figure 1

Toward A Taxonomy of the Affective Domain
(Gephart & Ingle, 1976, p. 188)

The taxonomies created by Brandhorst (1978) and based on Maslow's B-cognition construct are significantly different than those previously discussed. The categories of the ego-involvement taxonomy are based on "the order of qualities of personality style as observed in behavior" (p. 9) and include objectivity, empathy, response delay, impulse suppression, and transformation as categories. The motivation orientation taxonomy is based on the assumption that active aesthetic appreciation is necessary for optimal psychological and physical health and that an aesthetic end product (e.g., a dance, painting, etc.) is less important than the process of aesthetic creation. The categories of this taxonomy are: perceptual awareness, perceptual synthesis, risk taking, concentration, and playfulness.

Brandhorst suggests the need for a third taxonomy with a conceptual-relational orientation associated with moral reasoning but does not define a category system for the taxonomy.

Possible Categories of Affective Outcomes for Schools

Using the preceeding descriptions of affective goals and taxonomies as a basis, I would like to propose three major categories of affective goals which could (or should) be significant components of schooling. While certainly not all-inclusive, these categories can perhaps serve as a basis for discussion leading to more clearly stated educational goals in the affective domain. The proposed categories are:

1) Goals related to positive attitudes toward subject areas or disciplines including esthestics (Shaver, 1972), i.e., art, music, literature, and the "cultural riches of civilization" (Brandhorst, 1978). These goals can be defined by a learner's willingness to (a) engage himself further with something and (b) get to know it more fully leading, perhaps, to synthesis with other areas. Such behaviors might lead us to conclude that the individual has positive feelings or a positive attitude toward a given field or area.

2) Goals related to the development of a rational basis for attitudes and values. This would include analytic thought about and decision-making in the realm of morals and ethics. Included here could be: (a) cognitive considerations of the effects of certain values, (b) the interdependence of one's own values leading to an understanding of the same phenomena as part of another's framework and (c) forming belief systems and/or value complexes.

The focus here is on making and supporting a decision, not the decision itself since decisions regarding values are inconsistent and fluctuate over time. Such goals might be operationally defined in such diverse ways as taking action because of a held value or merely the willingness to listen to alternative views during the decision-making process.

3) Goals related to affective processes, i.e., those indicative of positive directional movement as perceived by the individual. These can be characterized as movement toward some undefined state indicated by alteration of behavior patterns or even statements of intent. These goals are based on one's experiences and perceptions of those experiences and include such diverse categories as the development of self-worth or self-esteem, self-directed activity or motivation, and creative expression.

Using Hierarchical Sequences to Integrate Cognition and Affect

Learning hierarchies describe the relationship of one task or behavior to another by indicating that two tasks are either independent of each other or that one task is prerequisite to another task. A prerequisite relationship between two tasks indicates that a lower level task is a necessary, but not sufficient, condition for mastery of a higher level task. For example, if task "a" is prerequisite to task "b," we could assume that mastery of task "a" must occur before task "b" can be mastered. When prerequisite and independent relationships are specified for a complete

unit of instruction, a pattern or network of prerequisite relationships emerges that can be used to sequence learning outcomes that comprise the unit.

Establishing Terminal Goals as a Basis for Hierarchy Construction

In order to construct a learning hierarchy a terminal or end goal must be behaviorally stated. Once stated, this terminal goal is used to generate subgoals. These subgoals form the subordinate levels of the hierarchy showing the prerequisite patterns among the tasks or behaviors.

The majority of work done in hierarchy construction has revolved around specifying behaviors in the cognitive domain. Gagné's (1962, 1970) intellectual skill paradigm has been used extensively for this purpose and numerous cognitive hierarchies can be found in the literature (Gagné and Bassler, 1963; Kolb, 1967-68; Merrill, Barton & Wood, 1970; Resnick, 1967; Resnick & Wang, 1969). However, when constructing hierarchies, generally only one aspect of human learning is being studied; the other component of behavior is omitted. It is usually the behaviors in affective domain which are left undefined. There are several reasons for this: (a) there is confusion about what the affective domain is, (b) behaviors are difficult to specify because language does not always lend itself to clarity, (c) in the affective domain the absence of behaviors is often as important if not more so than the presence of behaviors and (d) since affective behaviors develop over time, some people believe planned development is impossible. However, all affective behaviors have specific referents, either concrete or abstract, and specification of these referents may help alleviate the problems just noted. The categories of affective goals

presented earlier were an attempt at classifying the referents of the affective domain important for schooling. Stating goals in terms of their referents is one way to begin to design instruction integrating cognition and affect and, specifically, develop hierarchies.

Constructing Hierarchies

Hierarchy construction begins by stating a terminal goal in operational terms, i.e., in terms of some overt behavior to be demonstrated by the learner. The more clearly and specifically this is done, the easier it will be to generate a hierarchy. An example of a terminal goal from each of the three categories of goals in the affective domain is:

1) Demonstrates commitment to continued involvement with music by engaging in two or more of the following: joining a musical group, learning to play an instrument, purchasing records or sheet music, attending musical concerts or plays, etc.
2) Demonstrates support or non-support of nuclear energy legislation by doing one of the following: leafleting, writing to the President or a Congressman, participating in local, state, or national campaigns, organizing others for action, writing editorials for school or local newspapers, debating the issues with classmates, etc.
3) Demonstrates increased confidence in self by engaging in an activity previously avoided, i.e., writing poetry, painting, a sport, talking to someone new, etc.

When goals have been stated, the next step in constructing a hierarchy is to generate subordinate levels of the hierarchy by performing a task

analysis (Gagné, 1970). Ideally, a task analysis merging the cognitive and affective domains would be performed by starting with the stated terminal goal and asking of each superordinate task, "What cognitive skills and attitudes must an individual possess in order to perform this higher level task?" However, it is generally easier to begin with either cognitive skills or attitudes, generating separate hierarchies initially and then merging the two sequences by the above method. (See Hurst, 1978, for a complete description of hierarchy construction integrating cognition and affect.) This task is somewhat easier in the cognitive domain than in the affective domain since a number of cognitive hierarchies have been developed and validated using Gagné's (1970) or Bloom's (1956) taxonomic frameworks and can be used as a guide. In the affective domain, Krathwohl, et al.'s (1964) taxonomy of behaviors is the only one that specifies outcomes, although Brandhorst (1978) has started work in that direction. I would caution against the strict use of Krathwohl's taxonomy since it has not been completely validated; however, it also can serve as a useful guide when used in conjunction with cognitive taxonomies.

Example Hierarchies Integrating Cognition and Affect

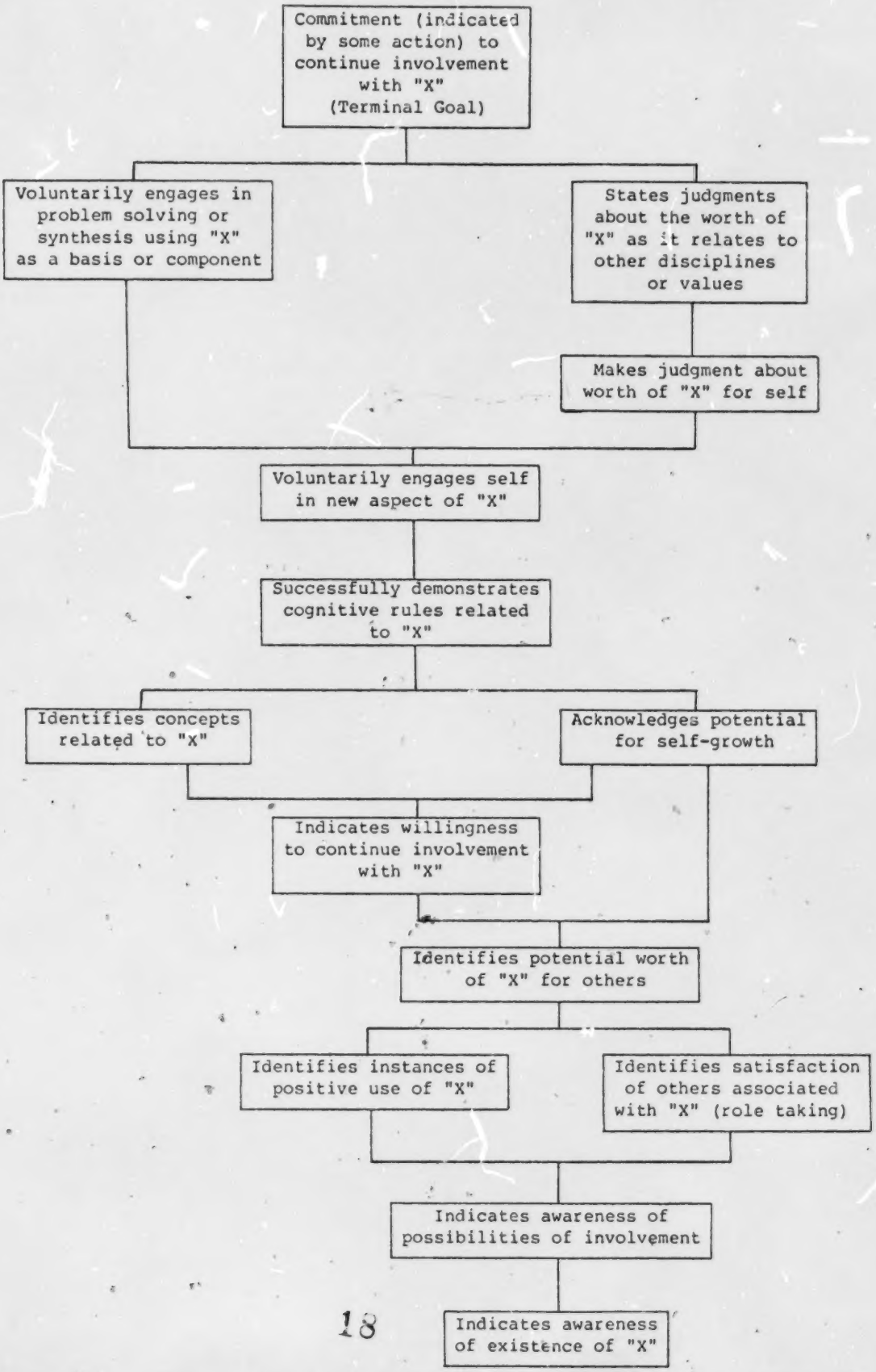
The notion of analyzing educational goals by combining cognitive and affective behaviors into one hierarchy is (a) unconventional and (b) lacks sound principles to guide its development. These two reasons, however, are poor excuses for failing to try to integrate the domains since we know that affective behaviors are important components of schooling and since we are relatively sure that cognitive and affective behaviors interact.

If we wait for the development, testing, validation and use of a formalized "theory" combining cognition and affect, we will miss the opportunity to influence hundreds of thousands of students presently in school.

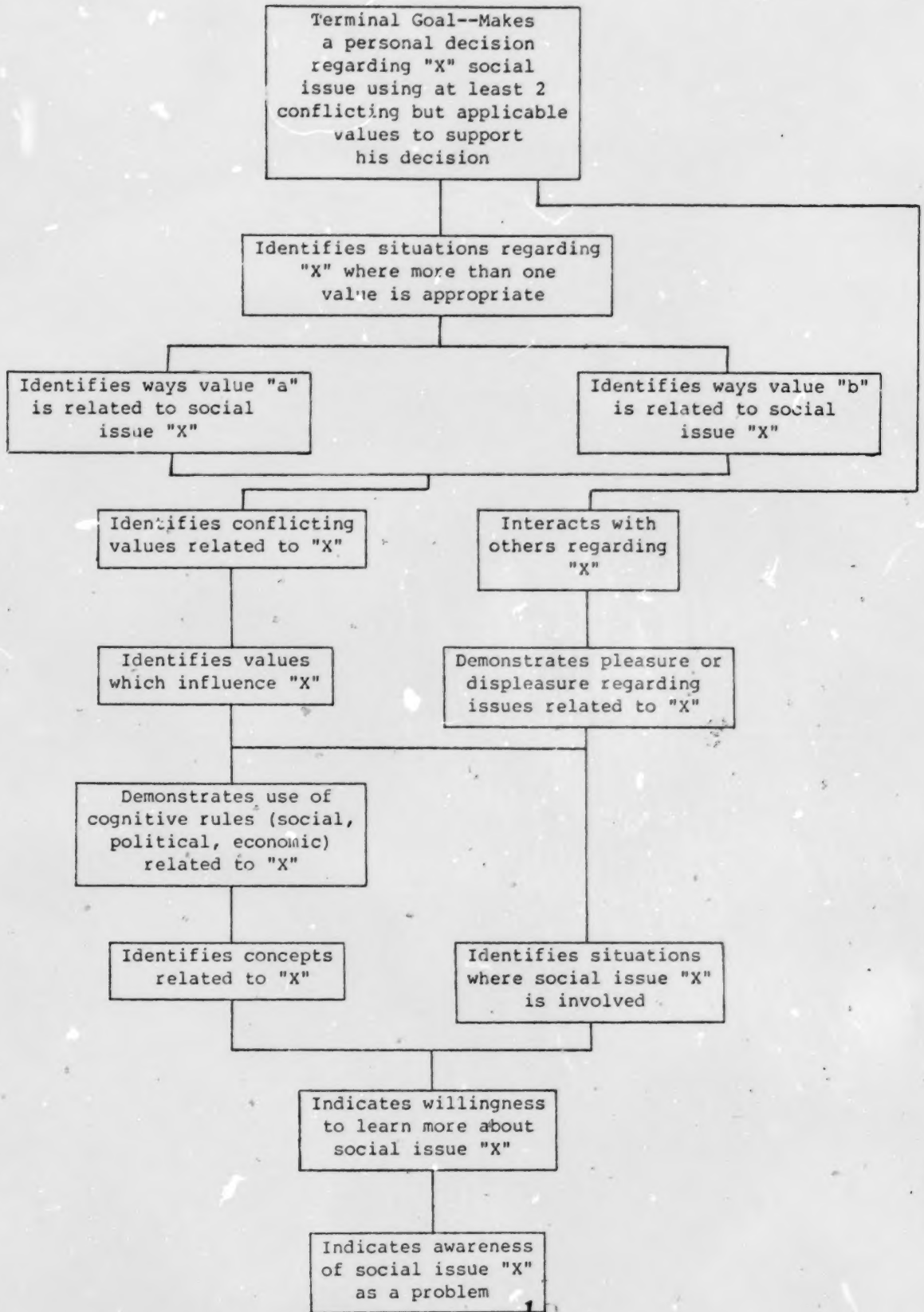
Therefore, two hierarchies are presented here. One hierarchy was developed for each of two goal areas identified earlier; a hierarchy for the third goal area has not yet been constructed.* The hierarchies are tentative; they are also generic, i.e., no content has been included since specification of particular content would require analysis of the rules and concepts in a given discipline. Teachers who desire to use this method are already content experts and can adapt the hierarchies to their subjects. The hierarchies were developed using Gagné's (1970) intellectual skill paradigm (cognitive domain) and the Krathwohl, et al. (1964) affective taxonomy as a framework. The hierarchies have not been validated; they are merely proposed. Ordering-theory (Airasian & Bart, 1975), a validation technique, is suggested for those who wish to test the accuracy of hypothesized hierarchies.

*Note: The hierarchical sequences proposed relate only to the terminal goal stated on the hierarchy. Changing the goal would also change the hierarchical sequence.

I. Goals related to positive attitudes toward subject areas or disciplines


Commitment (indicated by some action) to continue involvement with "X" (Terminal Goal)
Voluntarily engages in problem solving or synthesis using "X" as a basis or component
States judgments about the worth of "X" as it relates to other disciplines or values
Makes judgment about worth of "X" for self
Voluntarily engages self in new aspect of "X"
Successfully demonstrates cognitive rules related to "X"
Identifies concepts related to "X"
Acknowledges potential for self-growth
Indicates willingness to continue involvement with "X"
Identifies potential worth of "X" for others
Identifies instances of positive use of "X"
Identifies satisfaction of others associated with "X" (role taking)
Indicates awareness of possibilities of involvement
Indicates awareness of existence of "X"

II. Goals related to the development of rational basis for attitudes and values


Terminal Goal--Makes a personal decision regarding "X" social issue using at least 2 conflicting but applicable values to support his decision
Identifies situations regarding "X" where more than one value is appropriate
Identifies ways value "a" is related to social issue "X"
Identifies ways value "b" is related to social issue "X"
Identifies conflicting values related to "X"
Interacts with others regarding "X"
Identifies values which influence "X"
Demonstrates pleasure or displeasure regarding issues related to "X"
Demonstrates use of cognitive rules (social, political, economic) related to "X"
Identifies concepts related to "X"
Identifies situations where social issue "X" is involved
Indicates willingness to learn more about social issue "X"
Indicates awareness of social issue "X" as a problem

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